

Split  
Work Order ID 79920-1

\*79920\*

Page 1

February-08-12 9:23:14 AM

Item ID: D4456-1

Accept

\*N9000040100\*

Setup Start

\*NS1\*

Revision ID:

Stop

\*NS2\*

Item Name: Fwd Raingutter, LH

Start Date: 17/02/2012 Start Qty: 20.00

\*20\*

Cust Item ID:

Required Date: 17/02/2012 Req'd Qty: 20.00

\*20\*

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/02/08

Tooling:

Date:

Run Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4456	A

100 0.00

\*100\*

FLOW WATER JET

Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg

606' - 032

Dwg Rev: A

Prog Rev: A

2-Deburr if necessary

W 12 02 12 (20)  
B 12-2-29  
11

110 0.00

\*110\*

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

W 12 02 12 (20)  
B 12-2-29 (25)

120 0.00

\*120\*

QC8- Inspect parts - second check

QC

Memo

0.00

Quality Control

S 12/02/29

S 12/02/29

counters  
(x20) Pto →  
counters  
(x25)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

79920-1

D4456-1

Part No: D4456-1 PAR #: \_\_\_\_\_ Fault Category: water jet operate NCR: Yes No DQA: OK Date: 12/06/28  
 Resolution: Scrap Disposition: Scrap QA: N/C Closed Date: 12/6/29

NCR: 12-1519		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/02/15	#100	Found when fill in water jet operator was doing a PAI - sheet that the wrong mat. was used. <del>Re-top</del> should be T6 and T6 was used. LC LOA on operator when pulling mat.	S	Scrap + Destroy QM +20 Replac with correct mat. 6061 T6 m 120777	12/2/29 Buzza	S	12/02/15	12/02/15

43.03 x 20 = 860.60 -

NOTE: Date &amp; initial all entries

# Work Order ID 79920

February-08-12 9:23:14 AM

**\*79920\***

Page 2

Item ID: D4456-1 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Fwd Raingutter, LH  
 Start Date: 17/02/2012 Start Qty: 20.00 **\*20\*** Cust Item ID:  
 Required Date: 17/02/2012 Req'd Qty: 20.00 **\*20\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	NC BRAKE	0.00							
<b>*130*</b>									
Small Fab	Memo	0.00							
Small Fab	1- Form as per dwg using DT9788 2- After forming cut off tabs as per dwg								
140	QC5- Inspect part completeness to step on W/O	0.00							
<b>*140*</b>									
QC	Memo	0.00							
Quality Control									
144	Outsource process - Heat Treat	0.00							
<b>*144*</b>									
Outsource1	Memo	0.00							
Outsource process - Heat Treat									

(11) 12-05-09

(11)

8/10/12  
Tagged P/w + B to parts.

CL 12105109 (11)

R/O: 16939

W/O: 79920-1

## WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D4456-1 PAR #: \_\_\_\_\_ Fault Category: Small FAB NCR: Yes No DQA: auth Date: 12/06/09  
 Resolution: Revert Disposition: Revert QA: N/C Closed Date: 12/6/09

NCR: 12-1520

## WORK ORDER NON-CONFORMANCE (NCR)

DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/05/09		Made -1's on -2's w/o and -2's on -1's w/o	<u>cr</u> 12/05/09	switch parts to correct w/o	<u>FF</u> 12-05-09	<u>S</u> 12/05/09	<u>cr</u> 12/05/09	<u>S</u> 12/05/09

NOTE: Date &amp; initial all entries

# Work Order ID 79920

February-08-12 9:23:14 AM

\*79920\*

Page 3

Item ID: D4456-1 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Fwd Raingutter, LH  
 Start Date: 17/02/2012 Start Qty: 20.00 \*20\* Cust Item ID:  
 Required Date: 17/02/2012 Req'd Qty: 20.00 \*20\* Customer:  
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start \*NR1\*  
 QC: Date: SPC (Y/N): Date: Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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146	Receive & Inspect for Damage & Mat'l Certs	0.00							
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\*146\*

Packaging

Packaging

Memo

0.00

QC → 8/2/06/01

(+14)

Pto →

150	Chemical Conversion Coat per QSI005 4.1	0.00							
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\*150\*

HandFinish

Hand Finishing

Memo

0.00

11 746 12-6-4

160	QC Inspect Part Finish	0.00							
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\*160\*

QC

Quality Control

Memo

0.00

11x 4 12/06/06

W/O: 79920-1 Perm. Change

## WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
12/06/18	# 1747	ADD STEP FOR QCG inspection: 9. QC7 <del>at</del> seg 160 #1	BE	12.06.18			S 12/06/18

Part No: D4456-1 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date &amp; initial all entries

# Work Order ID 79920

**\*79920\***

Page 4

February-08-12 9:23:14 AM

Item ID: D4456-1 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Fwd Raingutter, LH  
 Start Date: 17/02/2012 Start Qty: 20.00 **\*20\*** Cust Item ID:  
 Required Date: 17/02/2012 Req'd Qty: 20.00 **\*20\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	Identify as per dwg & Stock Location: <u>11a</u>	0.00							
<b>*170*</b>									
Packaging	Memo	0.00				<u>110</u>		<u>12/6/18</u>	
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
<b>*180*</b>									
QC	Memo	0.00							
Quality Control									

*MF*  
12-06-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

February-08-12 9:23:19 AM

Page 1

Work Order ID: 79920

\*79920\*

Parent Item: D4456-1

\*D4456-1\*

Parent Item Name: Fwd Raingutter, LH

Start Date: 17/02/2012

Required Date: 17/02/2012

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP REV:A 11.11.21 NEW ISSUE DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M60610S.032		Purchased	No			100	sf	41.0000	0.125	2.631579			

\*M60610S 032\*

6061 0 SHEET .032

\*\*

12-02-12

Location

Loc Qty

Loc Code

MAT021

41

119686

41

B# 120285

6061.T.O.

~~120777~~

120777

B12-2-29

25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

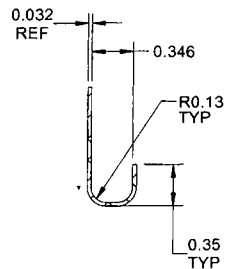
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

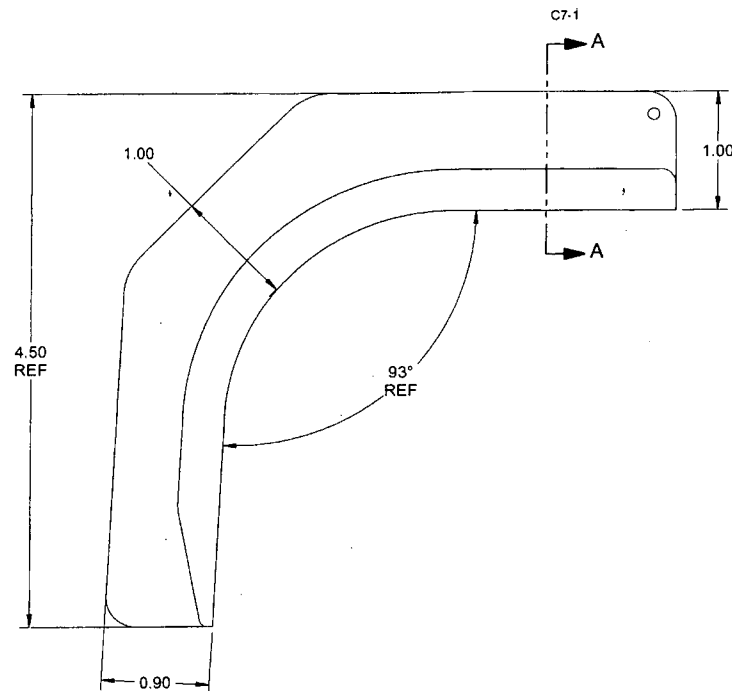
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

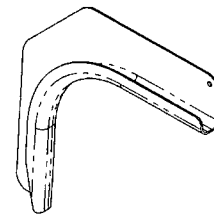
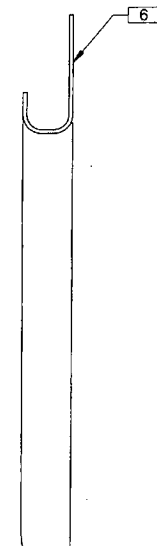




**SECTION A-A** D4--1



**D4456-1 FWD RAINGUTTER, LH**



SHEET  
REF  
INDEX  
UNLESS OTHERWISE  
SPECIFIED TO A.W.  
W. C. C. C. C.  
NO. *19920*  
*112027*  
**RELEASED**  
2012-01-17  
*JMD*

**NOTES:**

- 1) MATERIAL: MAKE FROM D4456-1F FLAT PATTERN  
HEAT TREAT TO 6061-T6 CONDITION AFTER FORMING
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.04 lbs
- 8) TRIM TABS ON THE HIDDEN LINES AFTER FORMING

A NEW ISSUE		RF	11.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	<b>DART AEROSPACE USA, INC.</b> KENT, WA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	<b>D4456</b>	SHEET 1 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	<b>RAINGUTTER</b>	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

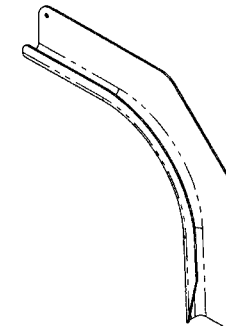
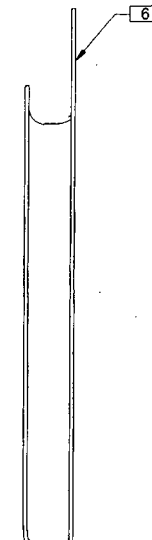
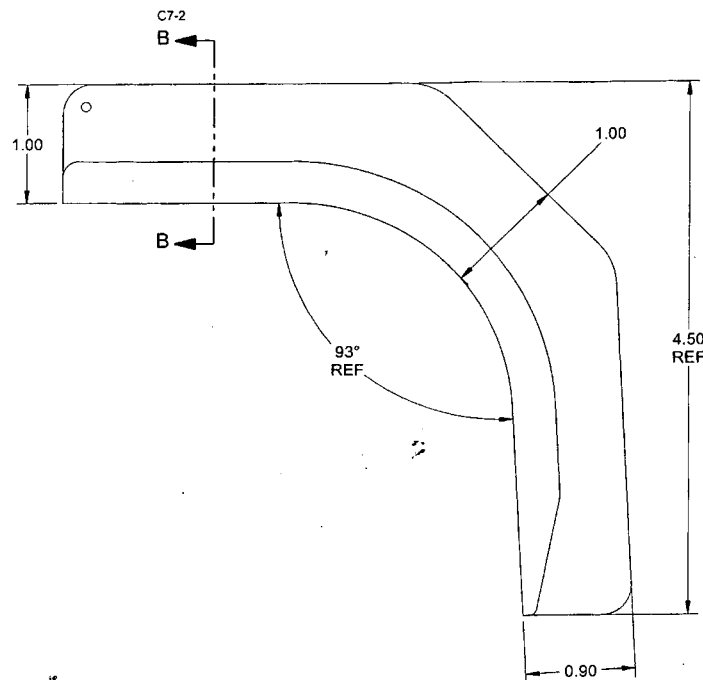
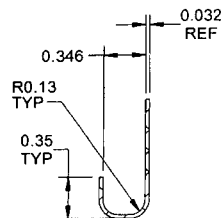
5

4

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2

1



79920

RELEASED  
2012-01-17  
WNP

# NOTES:

- 1) MATERIAL: MAKE FROM D4456-1F FLAT PATTERN  
HEAT TREAT TO 6061-T6 CONDITION AFTER FORMING
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.03 lbs
- 8) TRIM TABS ON THE HIDDEN LINES AFTER FORMING

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	KENT, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4456	SHEET 2 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	FWD RAINGUTTER, RH	1:1
DATE	11.11.17	<small>COPYRIGHT © 2011 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

8

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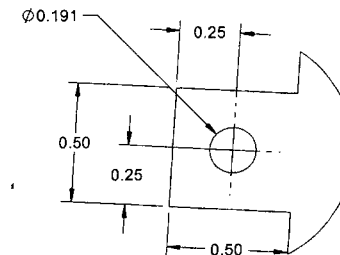
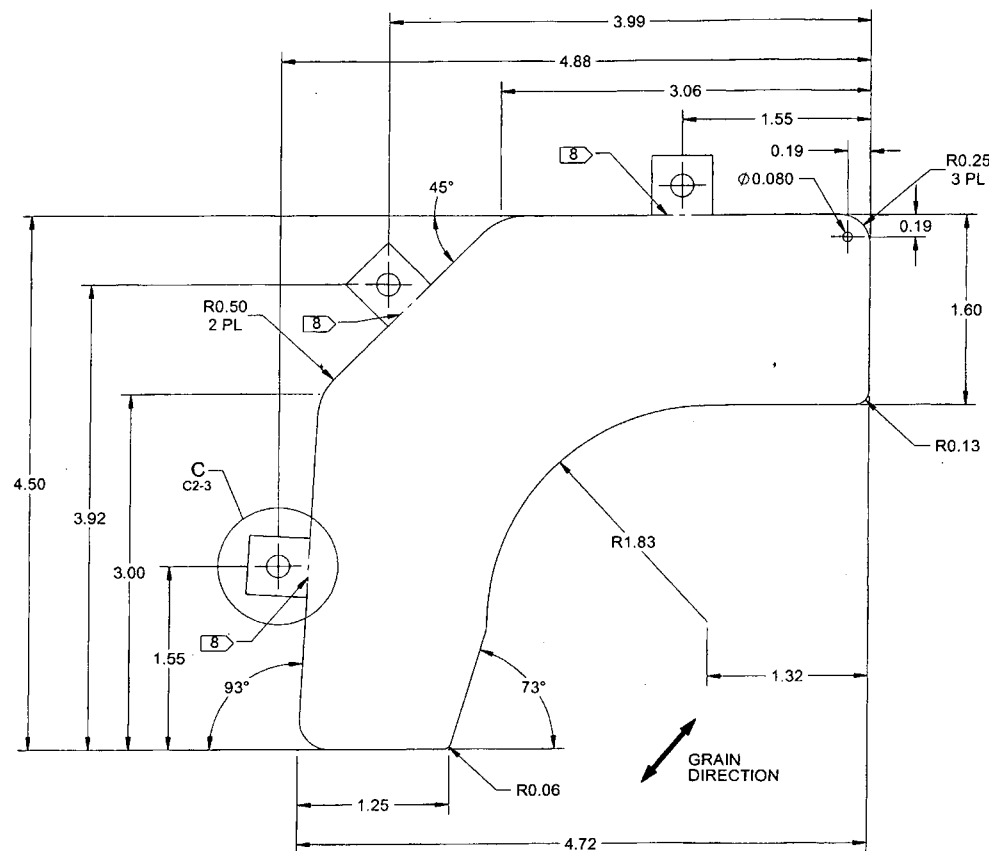
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



**DETAIL C**  
TYP C7-3  
C6-3  
D5-3

19920

0.032  
REF

RELEASED  
2012-01-17  
JUN

**D4456-1F FWD RAINGUTTER FLAT PATTERN**

**NOTES:**

- 1) MATERIAL: 6061-O ALUMINUM SHEET 0.032 THICK  
PER AMS QQ-A-250/11 OR AMS 4025  
REF DART SPEC M6061-OS.032
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.04 lbs

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MFG. APPR.	<i>[Signature]</i>	<b>D4456</b>	SHEET 3 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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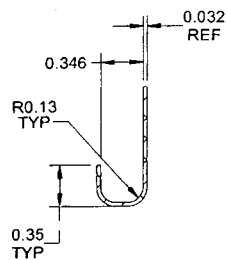
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

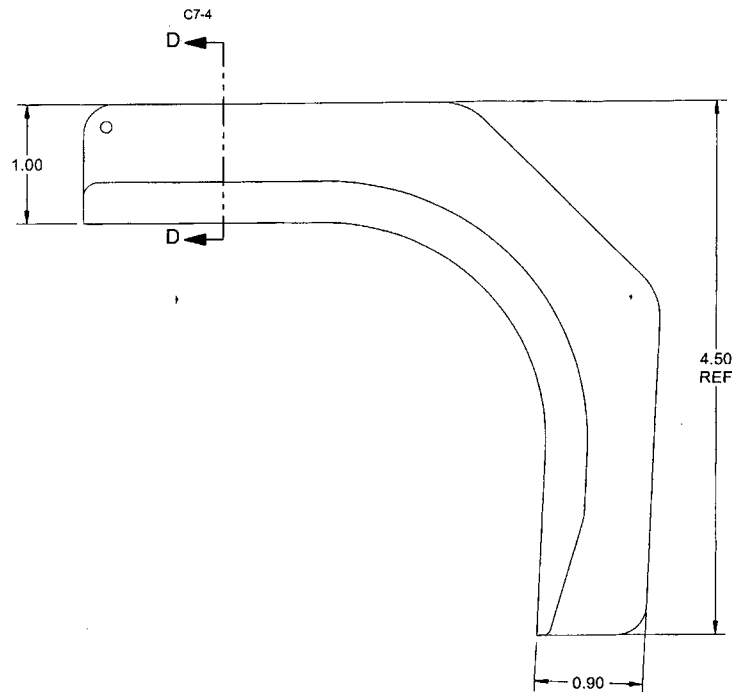
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

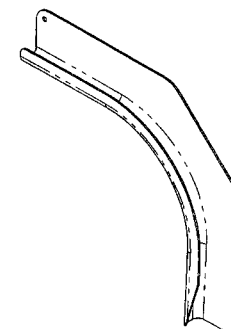
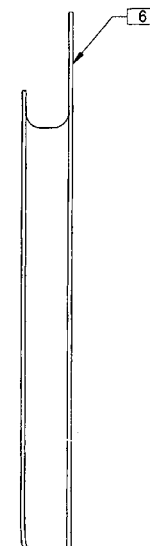
**NOTE:** Date & initial all entries



**SECTION D-D C6-4**



**D4456-3 AFT RAINGUTTER, LH**



79920

RELEASED  
2012-01-17

**NOTES:**

- 1) MATERIAL: MAKE FROM D4456-3F FLAT PATTERN  
HEAT TREAT TO 6061-T6 CONDITION AFTER FORMING
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 014 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.04 lbs
- 8) TRIM TABS ON THE HIDDEN LINES AFTER FORMING

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	KENT, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4456	SHEET 4 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	RAINGUTTER	NTS
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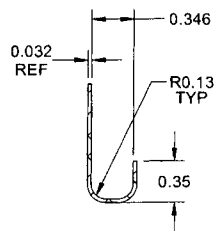
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

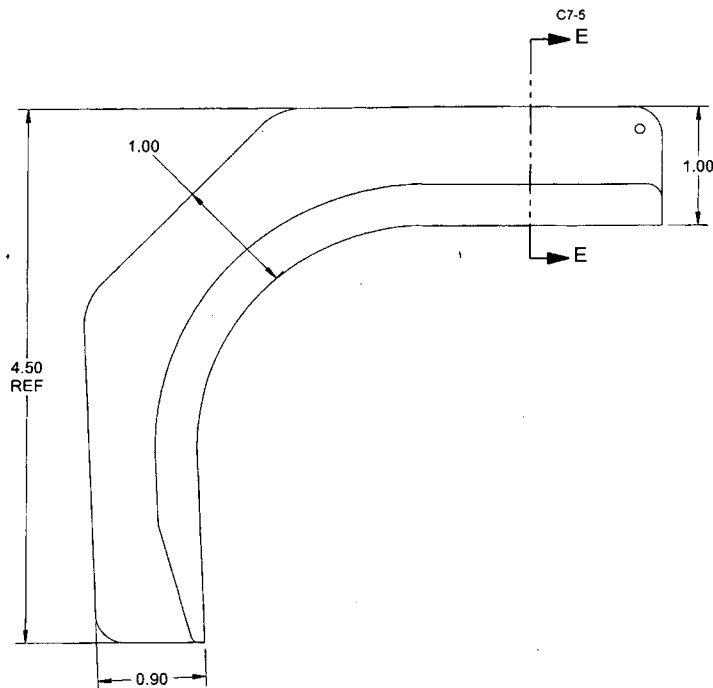
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

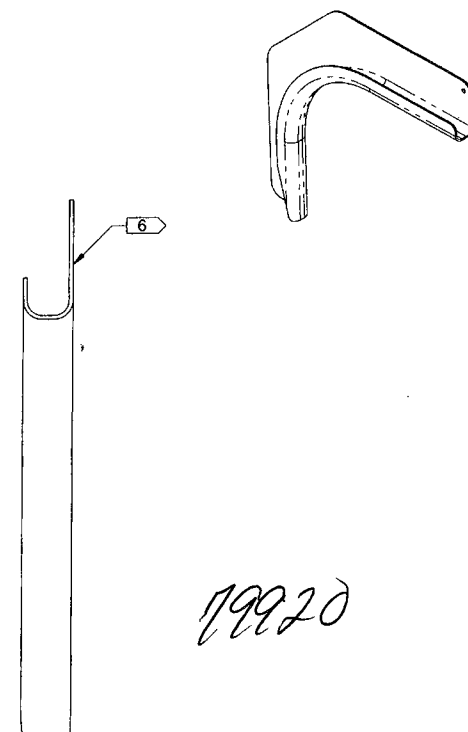
**NOTE:** Date & initial all entries



**SECTION E-E** D4-5



**D4456-4 AFT RAINGUTTER, RH**



19920

RELEASED  
11/2012-01-17  
JW

**NOTES:**

- 1) MATERIAL: MAKE FROM D4456-3F FLAT PATTERN  
HEAT TREAT TO 6061-T6 CONDITION AFTER FORMING
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.04 lbs
- 8) TRIM TABS ON THE HIDDEN LINES AFTER FORMING

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	KENT WA	
CHECKED	RF	DRAWING NO.	REV. A
MFG. APPR.	RF	<b>D4456</b>	SHEET 5 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	<b>RAINGUTTER</b>	NTS
DATE	11.11.17	<small>           COPYRIGHT © 2011 BY DART AEROSPACE USA, INC.            THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS            NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT            WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.         </small>	

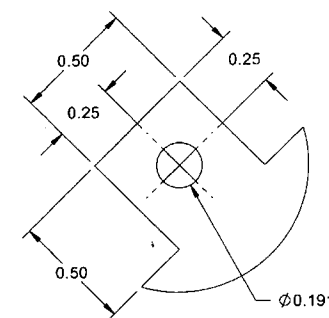
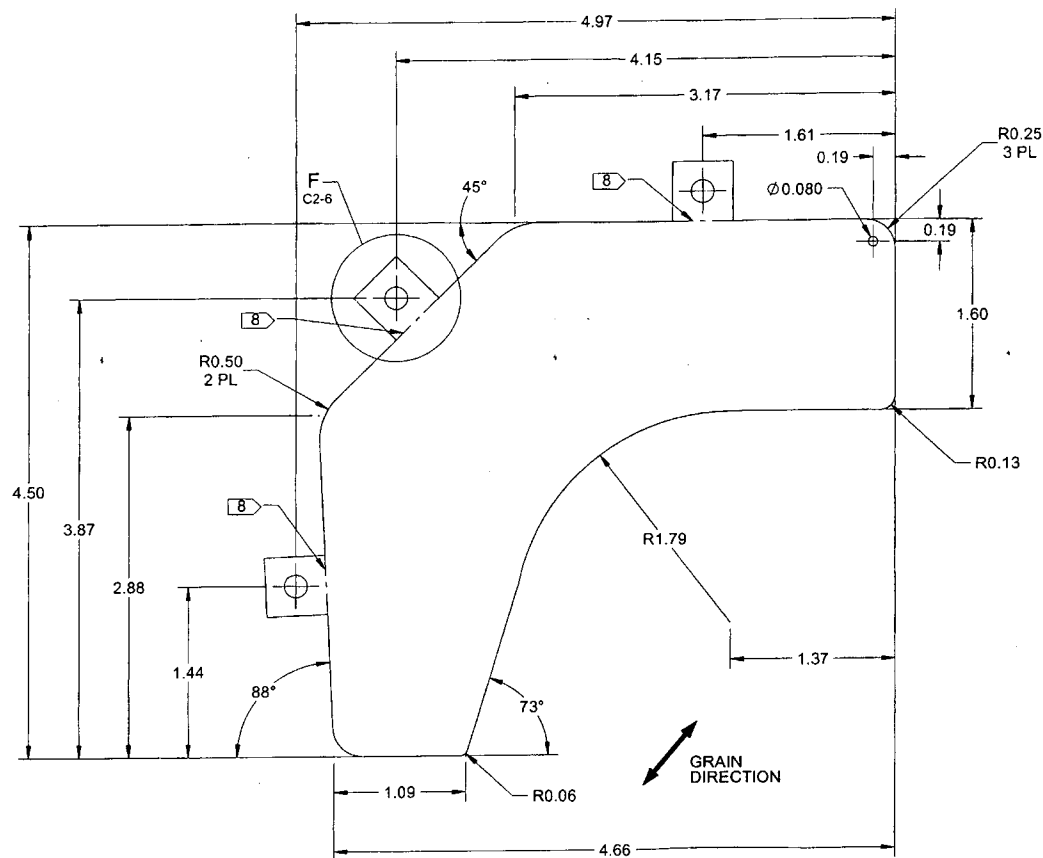
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



**DETAIL F**  
TYP 87-6  
C6-6  
D5-6

19920

RELEASED  
2012-01-17  
JMP

**D4456-3F AFT RAINGUTTER FLAT PATTERN**

**NOTES:**

- 1) MATERIAL: 6061-O ALUMINUM SHEET 0.032 THICK  
PER AMS QQ-A-250/11 OR AMS 4025  
REF DART SPEC M6061-OS.032
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.04 lbs

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	KENT, WA	
CHECKED	RF	DRAWING NO.	REV. A
MFG. APPR.	RF	<b>D4456</b>	SHEET 6 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	<b>RAINGUTTER</b>	NTS
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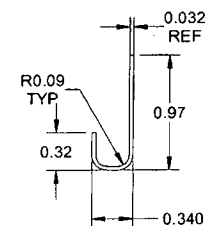
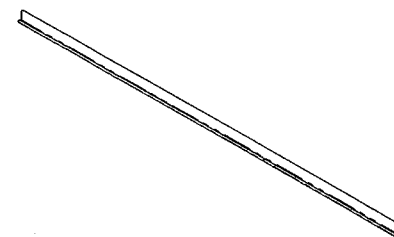
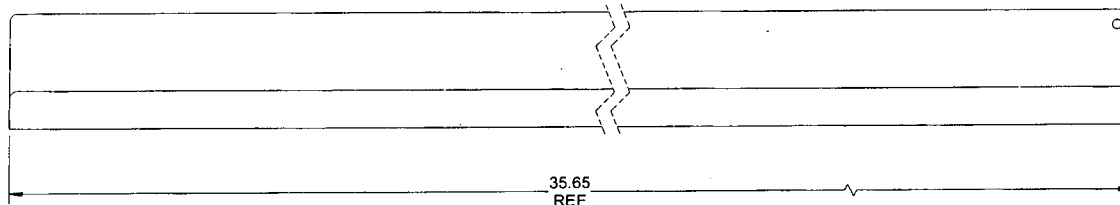
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



79920

**D4456-5 CENTER RAINGUTTER**

RELEASED  
2012-01-17

**NOTES:**

- 1) MATERIAL: MAKE FROM D4456-5F FLAT PATTERN
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.17 lbs
- 8) TRIM TABS ON THE HIDDEN LINES AFTER FORMING

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	KENT, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	<b>D4456</b>	SHEET 7 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	<b>RAINGUTTER</b>	NTS
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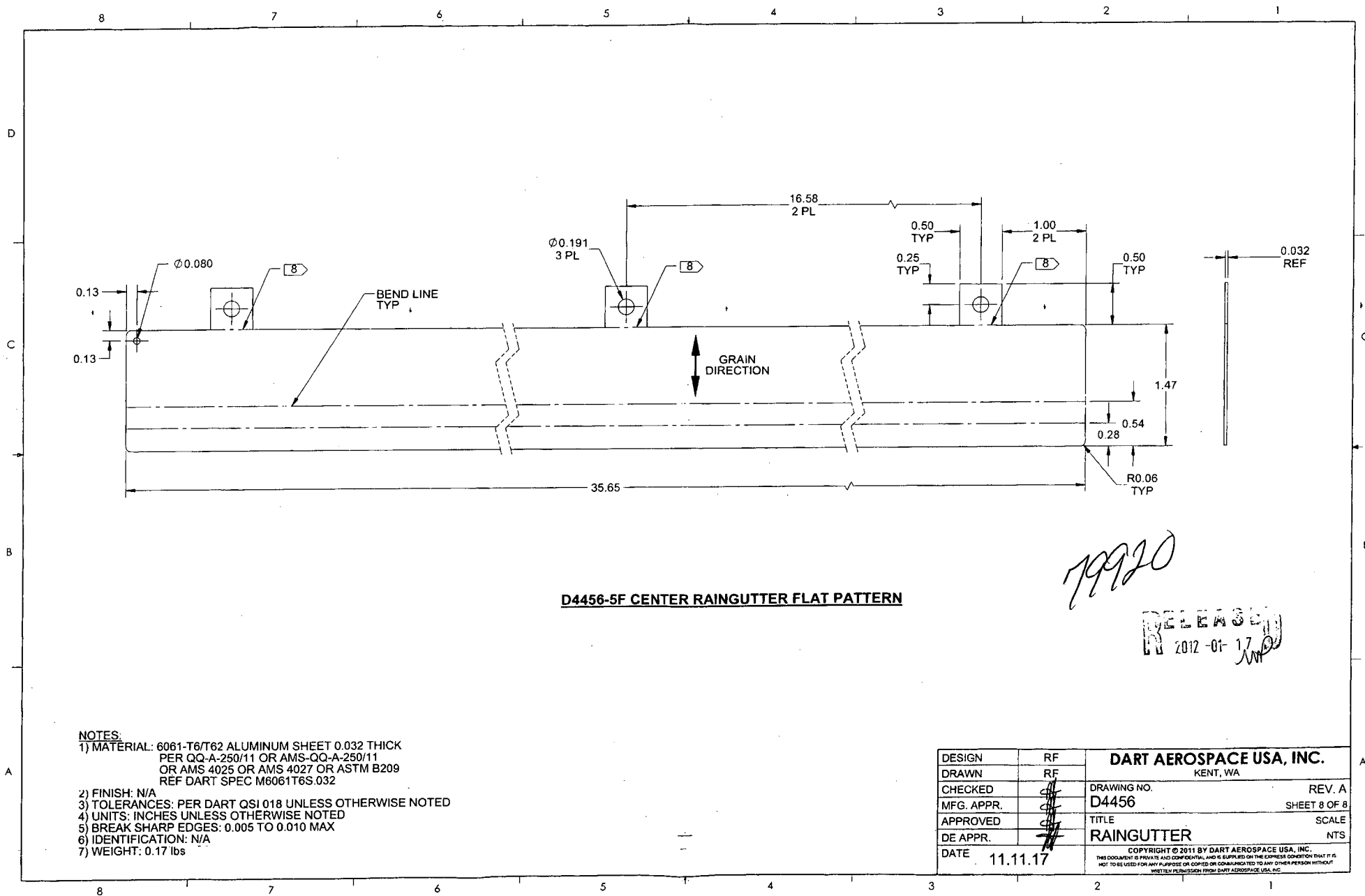
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



# NOTES:

1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET 0.032 THICK  
 PER QQ-A-250/11 OR AMS-QQ-A-250/11  
 OR AMS 4025 OR AMS 4027 OR ASTM B209  
 REF DART SPEC M6061T6S.032

2) FINISH: N/A

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

6) IDENTIFICATION: N/A

7) WEIGHT: 0.17 lbs

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	KENT, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	<b>D4456</b>	SHEET 8 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	<b>RAINGUTTER</b>	NTS
DATE	11.11.17	COPYRIGHT © 2011 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

RELEASED  
 2012-01-17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



Metcor Inc.  
560, boul. Arthur-Sauvé  
St-Eustache (Québec) J7R 5A8  
Tél. : 450 473-1834  
Télécopieur/Fax administration : 450 491-5449  
Télécopieur/Fax production : 450 491-5451

# Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
175904	1

CLIENT / clientel: 213

DART AEROSPACE

270 ABERDEEN

HAWKESBURY

ON K3A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K3A 1K7

DEMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
15839		AL-6061		

## SPECIFICATIONS DU PROCÉDÉ processing specifications

T1 ANNEAL

V6LE AGING TO CONDITION T6

DÉFINITION / requirement	SPECIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
DUCTIVITÉ	40 - 50 %IACS	31	48 - 47 %IACS
DURETÉ	88 HREW MIN	31	88 - 90 HREW

DURETÉ MESURÉE EN HR15TW = 78-79  
HR15TW

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
31	1	D4456-1 (11) FWD RAINGUTTER  (8) D4456-2 FRD RAINGUTTER  (14) D4456-4 AFT RAINGUTTER  CONTENANT: 1 BOÎTE DE CARTON

## COMMENTAIRES / comments

RECTEUR / Inspector:

DATE: 2012-05-18

# METCOR INC.

560 BOUL. ARTHUR-SAUVÉ  
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

## Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
175904	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
16939		AL-6061		

### SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

SOL ANNEAL

SINGLE AGING TO CONDITION T6

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCTIVITY	40 - 50 %IACS	31	46 - 47 %IACS
		(60kHz)	
HARDNESS	85 HREW MIN	31	88 - 90 HREW
			DURETEE MESUREE EN HR15TW = 78-79 HR15TW

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
31	1	D4456-1 (11) FWD RAINGUTTER REF: 79920  (6) D4456-2 FRD REF: 79921 RAINGUTTER  (14) D4456-4 AFT REF: 79923 RAINGUTTER  CONTENANT: 1 BOÎTE DE CARTON

Operation	Temp. spécifiée Specified Temp	Temps de trempage Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
1.00 CONT. INIT.										
2.00 Degrease										
3.00 PREPARING	COMPTAGE									
4.00 PREHEAT 1	529°C	0:30	air			701				

# METCOR INC.

560 BOUL. ARTHUR-SAUVÉ  
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5493

## Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
175904	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

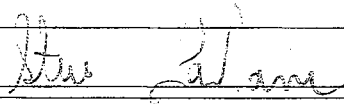
HAWKESBURY

ON K6A 1K7

Operation	Temp. spécifiée Specified Temp	Temps de tremp Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
5.00 WATER TEN										
6.00 SOL ANNEA	529°C	0:30 +/-5 MIN	AIR		WATER 32MAX	701				
7.00 QUENCHDE										
8.00 WATER TEN										
9.00 PREPARINC										
10.00 AGE HARDE	177°C	7 hrs	air			702				
11.00 HARDN INS										
12.00 FINAL INSP							05-16-2012			05-16-2012

### COMMENTAIRES / comments

APPROUVÉ par / Approved by:



DATE: 2012-05-17

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client. / We certify that all the information on this report is exact and in accordance with the order requirements.